

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-25 (Canceled)

26. (New) A urethane resin for a sealer of a light-emitting or light-receiving element, which is obtainable by molding a urethane resin composition on the element, wherein the urethane resin composition comprises:

a component (A) containing a compound having at least two isocyanate groups and being at least one compound selected from the group consisting of:

- (i) an aromatic polyisocyanate having a structure in which any isocyanate groups are not directly bonded to a benzene ring,
- (ii) an aliphatic polyisocyanate,
- (iii) an alicyclic polyisocyanate, and
- (iv) derivatives of the polyisocyanates (i) to (iii) in which the polyisocyanates (i) to (iii) are modified to an isocyanurate, carbodiimide, uretonimine, uretdione, allophanate and biuret, and isocyanate group-terminated urethane prepolymer of the polyisocyanates (i) to (iii), and

a component (B) containing a compound having hydroxyl groups; and

wherein the resin has:

- 1) a refractive index of 1.45 or more as measured by using a D line from a helium light source,
- 2) a glass transition temperature (Tg) of 75°C or more,
- 3) a ΔE of 1.5 or less as measured after irradiation for 600 hours by a sunshine weatherometer using a carbon arc lamp, and
- 4) a sulfur atom content of 500 ppm or less.

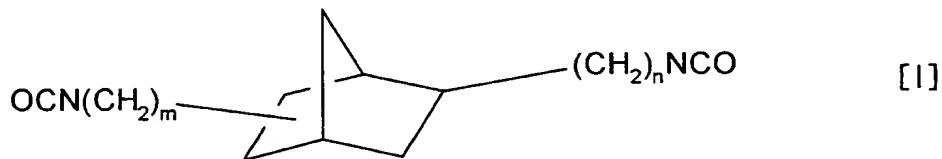
27. (New) The resin according to claim 26, which has a ΔE of 1.5 or less after being treated for 300 hours in a thermostatic chamber having a relative humidity of 90% and a temperature of 80°C.

28. (New) The resin according to claim 26, wherein the content of alkali metal atoms is 10 ppm or less.

29. (New) The resin according to claim 26, wherein the compound having at least two isocyanate groups is a derivative of the polyisocyanates (i) to (iii) in which the polyisocyanates (i) to (iii) are modified to an isocyanurate, or isocyanate group-terminated urethane prepolymer of the polyisocyanates (i) to (iii).

30. (New) The resin according to claim 26, wherein the compound having at least two isocyanate groups is a polycyclic alicyclic polyisocyanate or its derivatives.

31. (New) The resin according to claim 30, wherein the polycyclic alicyclic polyisocyanate is a polycyclic alicyclic diisocyanate represented by the following general formula [I]:



wherein m and n each independently represent an integer of 1 to 5.

32. (New) The resin according to claim 31, wherein the polycyclic alicyclic polyisocyanate is a polycyclic alicyclic diisocyanate represented by the formula [I] wherein both m and n are 1.

33. (New) The resin according to claim 26, wherein the compound having at least two isocyanate groups is at least one compound selected from the group consisting of di(isocyanatomethyl)benzene, bis(1-isocyanato-1,1-dimethylethyl)benzene, 4,4'-diisocyanato-dicyclohexylmethane, 1-isocyanato-3,5,5-trimethyl-3-isocyanatomethylcyclohexane and bis(isocyanatomethyl)cyclohexane.

34. (New) The resin according to claim 26, wherein the compound having hydroxyl groups is a compound having at least two hydroxyl groups.

35. (New) The resin according to claim 26, wherein the element is a light-emitting diode.

36. (New) A urethane resin composition for a sealer of a light-emitting or light-receiving element, which comprises:

a component (A) containing a compound having at least two isocyanate groups and being at least one compound selected from the group consisting of:

- (i) an aromatic polyisocyanate having a structure in which any isocyanate groups are not directly bonded to a benzene ring,
- (ii) an aliphatic polyisocyanate,
- (iii) an alicyclic polyisocyanate, and
- (iv) derivatives of the polyisocyanates (i) to (iii) in which the polyisocyanates (i) to (iii) are modified to an isocyanurate, carbodiimide, uretonimine, uretdione, allophanate and biuret, and isocyanate group-terminated urethane prepolymer of the polyisocyanates (i) to (iii), and

a component (B) containing a compound having hydroxyl groups,

wherein the content of sulfur atoms is 500 ppm or less.

37. (New) The composition according to claim 36, wherein the compound having at least two isocyanate groups is the derivatives of the polyisocyanates (i) to (iii) in which the polyisocyanates (i) to (iii) are modified to an isocyanurate, or isocyanate group-terminated urethane prepolymer of the polyisocyanates (i) to (iii).

38. (New) The composition according to claim 36, wherein an initial viscosity of said composition at the time of mixing the component (A) and the component (B) together at 20° is in a range of 10 to 10,000 mPa·s.

39. (New) The composition according to claim 38, wherein a time required for a viscosity after mixing of the component (A) and the component (B) to become twice as much as the initial viscosity is in a range of 2 to 20 hours at 20°C and 50% RH.

40. (New) The composition according to claim 36, wherein the compound having at least two isocyanate groups is the derivatives of the polyisocyanates (i) to (iii) in which the polyisocyanates (i) to (iii) are modified to an isocyanurate, or isocyanate group-terminated urethane prepolymer of the polyisocyanates (i) to (iii).

41. (New) The composition according to claim 36, wherein the compound having at least two isocyanate groups is a polycyclic alicyclic polyisocyanate or its derivatives.

42. (New) The composition according to claim 36, wherein the polycyclic alicyclic polyisocyanate is a polycyclic alicyclic diisocyanate represented by the following general formula [I]:



wherein m and n each independently represent an integer of 1 to 5.

43. (New) The composition according to claim 42, wherein the polycyclic alicyclic polyisocyanate is a polycyclic alicyclic diisocyanate represented by the formula [I] wherein both m and n are 1.

44. (New) The composition according to claim 36, wherein the compound having at least two isocyanate groups is at least one compound selected from the group consisting of di(isocyanatomethyl)benzene, bis(1-isocyanato-1,1-dimethylethyl)benzene, 4,4'-diisocyanato-dicyclohexylmethane, 1-isocyanato-3,5,5-trimethyl-3-isocyanatomethylcyclohexane and bisicocynatomethylcyclohexane.

45. (New) The composition according to claim 36, wherein the compound having hydroxyl groups is a compound having at least two hydroxyl groups.

46. (New) The composition according to claim 45, wherein the content of alkali metal atoms in the compound having at least two hydroxyl groups is 10 ppm or less.

47. (New) The composition according to claim 36, wherein the element is a light-emitting diode.

48. (New) A light-emitting or a light-receiving element sealed by a urethane resin, which is obtained by molding a urethane resin composition on the element, wherein the urethane resin composition comprises:

a component (A) containing a compound having at least two isocyanate groups and being at least one compound selected from the group consisting of:

(i) an aromatic polyisocyanate having a structure in which any isocyanate groups are not directly bonded to a benzene ring,
(ii) an aliphatic polyisocyanate,
(iii) an alicyclic polyisocyanate, and
(iv) derivatives of the polyisocyanates (i) to (iii) in which polyisocyanates (i) to (iii) are modified to an isocyanurate, carbodiimide, uretonimine, uretdione, allophanate and biuret, and isocyanate group-terminated urethane prepolymer of the polyisocyanates (i) to (iii), and

a component (B) containing a compound having hydroxyl groups, and

wherein the resin has:

- 1) a refractive index of 1.45 or more as measured by using a D line from a helium light source,
- 2) a glass transition temperature (Tg) of 75°C or more,
- 3) a ΔE of 1.5 or less as measured after irradiation for 600 hours by a sunshine weatherometer using a carbon arc lamp, and
- 4) a sulfur atom content of 500 ppm or less.

49. (New) The element according to claim 48, which is a light-emitting diode.

50. (New) A sealer of a light-emitting or light-receiving element, which is obtainable by molding a urethane resin composition on the element, wherein the urethane resin composition comprises:

a component (A) containing a compound having at least two isocyanate groups and being at least one compound selected from the group consisting of:

- (i) an aromatic polyisocyanate having a structure in which any isocyanate groups are not directly bonded to a benzene ring,
- (ii) an aliphatic polyisocyanate,
- (iii) an alicyclic polyisocyanate, and
- (iv) derivatives of the polyisocyanates (i) to (iii) in which the polyisocyanates (i) to (iii) are modified to an isocyanurate, carbodiimide, uretonimine, uretdione, allophanate and biuret, and isocyanate group terminated urethane prepolymer of the polyisocyanates (i) to (iii), and

a component (B) containing a compound having hydroxyl groups; and

wherein the resin has:

- 1) a refractive index of 1.45 or more as measured by using a D line from a helium light source,
- 2) a glass transition temperature (Tg) of 75°C or more,

- 3) a ΔE of 1.5 or less as measured after irradiation for 600 hours by a sunshine weatherometer using a carbon arc lamp, and
- 4) a sulfur atom content of 500 ppm or less.

51. (New) The sealer according to claim 50, which has a ΔE of 1.5 or less after treated for 300 hours in a thermostatic chamber having a relative humidity of 90% and a temperature of 80°C.

52. (New) The sealer according to claim 50, wherein the content of alkali metal atoms is 10 ppm or less.

53. (New) The sealer according to claim 50, wherein the compound having at least two isocyanate groups is the derivatives of the polyisocyanates (i) to (iii) in which the polyisocyanates (i) to (iii) are modified to an isocyanurate, or isocyanate group-terminated urethane prepolymer of the polyisocyanates (i) to (ii).

54. (New) The sealer according to claim 50, wherein the compound having at least two isocyanate groups is a polycyclic alicyclic polyisocyanate or its derivatives.

55. (New) The sealer according to claim 54, wherein the polycyclic alicyclic polyisocyanate is a polycyclic alicyclic diisocyanate represented by the following general formula [I]:



wherein m and n each independently represent an integer of 1 to 5.

56. (New) The sealer according to claim 55, wherein the polycyclic alicyclic polyisocyanate is a polycyclic alicyclic diisocyanate represented by the formula [I] wherein both m and n are 1.

57. (New) The sealer according to claim 50, wherein the compound having at least two isocyanate groups is at least one compound selected from the group consisting of di(isocyanatomethyl) benzene, bis(1-isocynato-1,1-dimethylethyl)benzene, 4,4'-diisocyanato-dicyclihexylmethane, 1-isocyanato-3,5,5-trimethyl-3-isocyanatomethylcyclohexane and bisisocyanatomethylcyclohexane.

58. (New) The sealer according to claim 50, wherein the compound having hydroxyl groups is a compound having at least two hydroxyl groups.

59. (New) The sealer according to claim 50, wherein the element is a light-emitting diode.